इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 8534-5 (2005): Mine tub couplings and drawbars, Part 5: Drawbars [MED 8: Mining Techniques and Equipment]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

भारतीय मानक

खान टब युग्मन और कर्षण शलाकाएँ

भाग 5 कर्षण शलाकाएँ

(पहला पुनरीक्षण)

Indian Standard

MINE TUB COUPLINGS AND DRAWBARS

PART 5 DRAWBARS

(First Revision)

ICS 73.100.10

© BIS 2005

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

March 2005 **Price Group 3**

Mining Techniques and Equipment Sectional Committee, ME 08

FOREWORD

This Indian Standard (Part 5) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Mining Techniques and Equipment Sectional Committee had been approved by the Mechanical Engineering Division Council.

This standard on mine tub couplings and drawbars is one of a series of standards on mine tub couplings and drawbars. Other parts in this series are:

(Part 1) : 2005	General requirements (*second revision*)
(Part 2) : 1994	C-link and D-shackle type couplings (*first revision*)
(Part 3) : 1994	R-shackle and link type couplings (*first revision*)
(Part 4) : 1994	F-shackle and link type (*first revision*)
(Part 6) : 1994	Hook and D-shackle type

This standard on drawbars has been published as a separate standard to overcome difficulties experienced in the use of drawbars specified in IS 4001 : 1976 'Mine tubs (*first revision*)'. It was felt that the design specified in IS 4001 : 1976 does not ensure straight pull through drawbar. In addition, use of couplings specified in other parts of this standard will require either additional attachments on mine tubs or alternate design of drawbars have to be used. This standard, therefore, specifies different types of drawbars which can be used with couplings specified in other parts of this standard. Accordingly the requirements of the drawbars have been deleted from IS 4001 : 1995.

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
MINE TUB COUPLINGS AND DRAWBARS
PART 5 DRAWBARS
(First Revision)

1 SCOPE

This standard (Part 5) specifies the requirements for drawbars fitted to the chassis of mine tubs and used for connecting mine tubs through couplings in a set of tubs and having a maximum safe working load of 50 kN.

2 REFERENCES

The following standards contain provisions, which through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
IS 549 : 2005/ ISO 1234 : 1997	Split pins — Specification (*third revision*)
4001 : 1995	Mine tubs — Specification (*second revision*)
8534 (Part 1) : 2005	Mine tub couplings and drawbars: Part 1 General requirements (*second revision*)

3 TYPES

Drawbars of mine tubs shall be of following types:

a) Type A – Lapped type, and
b) Type B – Flat type.

4 DIMENSIONS

4.0 Dimensions of drawbars shall be as given in **4.1** and **4.2**.

4.1 Lapped Type Drawbar

The dimensions of lapped type drawbars shall be as given in Fig. 1. The dimensions of end fitting of lapped type drawbars shall be as given in Fig. 2. The assembly of lapped type drawbar end with end fitting is given in Fig. 3.

4.2 Flat Type Drawbar

The dimensions of drawbar (to be used directly with tub coupling) shall be as given in Fig. 4.

5 DESIGNATION

A mine tub drawbar of Type A conforming to this standard shall be designated as:

Mine tub drawbar, Type A, IS 8534 (Part 5).

6 GENERAL REQUIREMENTS

6.1 Drawbars conforming to this standard shall comply with all requirements laid down in IS 8534 (Part 1). In addition, the drawbars shall also conform to the requirements specified in **6.2** to **6.7**.

6.2 All holes in drawbars shall be made by drilling and not by punching.

6.3 The drawbars shall be mounted on mine tub chassis below the mine tub body (*see* IS 4001) by riveting.

6.4 The ends and the lengths of the drawbars shall be such that there is no fouling when tubs are buffered together and there is no locking of tubs on curves.

6.5 In drawbars of Type A, the lapped portion shall be riveted and side welded on both sides. After riveting, the gap between lapped flat faces shall not exceed 0.25 mm.

6.6 In drawbars of Type B, the ends shall be reinforced by welding a short piece of plate of thickness equal to the drawbar thickness.

6.7 After riveting, each rivet shall be checked by tight hammering and in case of any vibration due to slackness; the rivet shall be cut and redone.

7 MARKING

7.1 Each coupling and drawbar shall permanently and legibly be marked on a non-vital component with the following information:

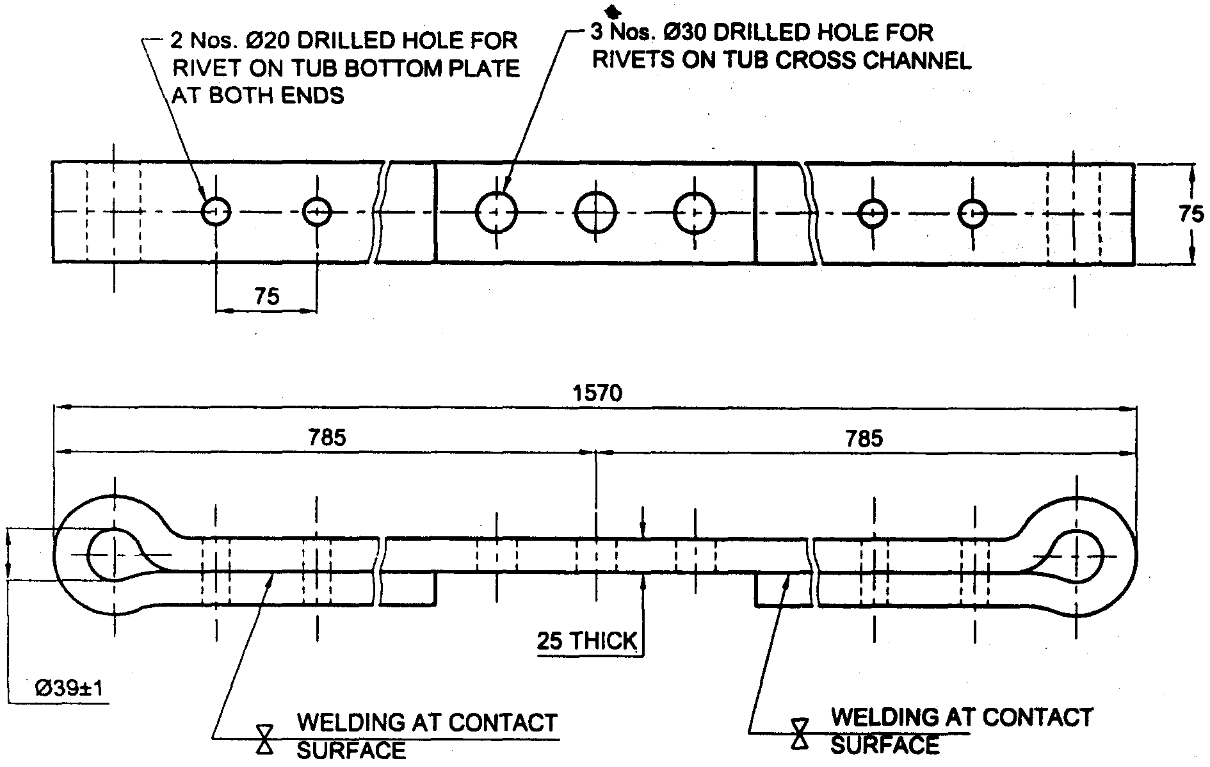
a) Manufacturer's identification mark;
b) Safe working load, in kN;
c) Type of heat treatment given; and
d) Identification mark bearing with manufacturer's certificate of test and examination [*see* Annex A of IS 8534 (Part 1)].

7.1.1 The stamps used for marking shall be of 5 mm size. Care shall be taken that the indentation is neither too sharp nor excessive in depth.

7.2 BIS Certification Marking

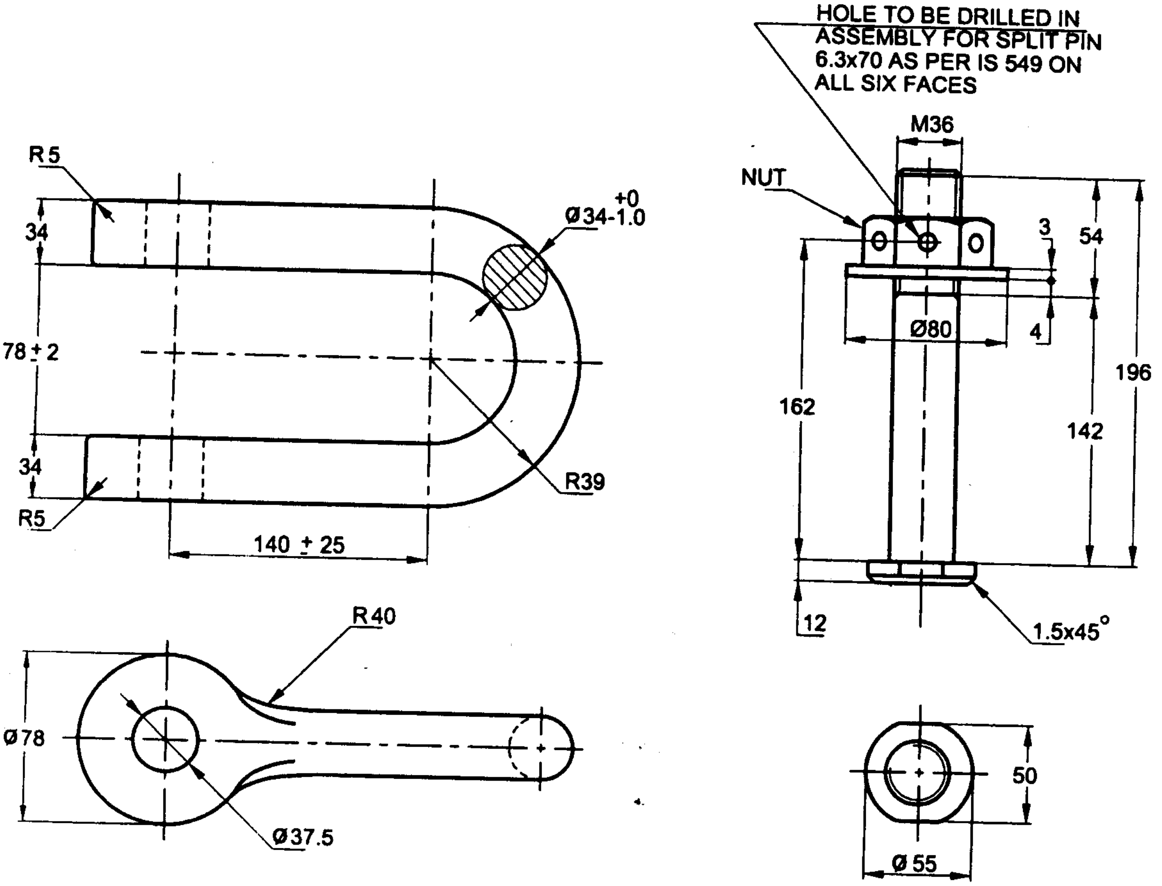
The drawbars may also be marked with the Standard Mark.

7.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.


2 Nos. Ø20 DRILLED HOLE FOR RIVET ON TUB BOTTOM PLATE AT BOTH ENDS
3 Nos. Ø30 DRILLED HOLE FOR RIVETS ON TUB CROSS CHANNEL
75
75
1570
785
785
25 THICK
Ø39±1
WELDING AT CONTACT SURFACE
WELDING AT CONTACT SURFACE

All dimensions in millimetres.

FIG. 1 LAPPED TYPE DRAWBAR

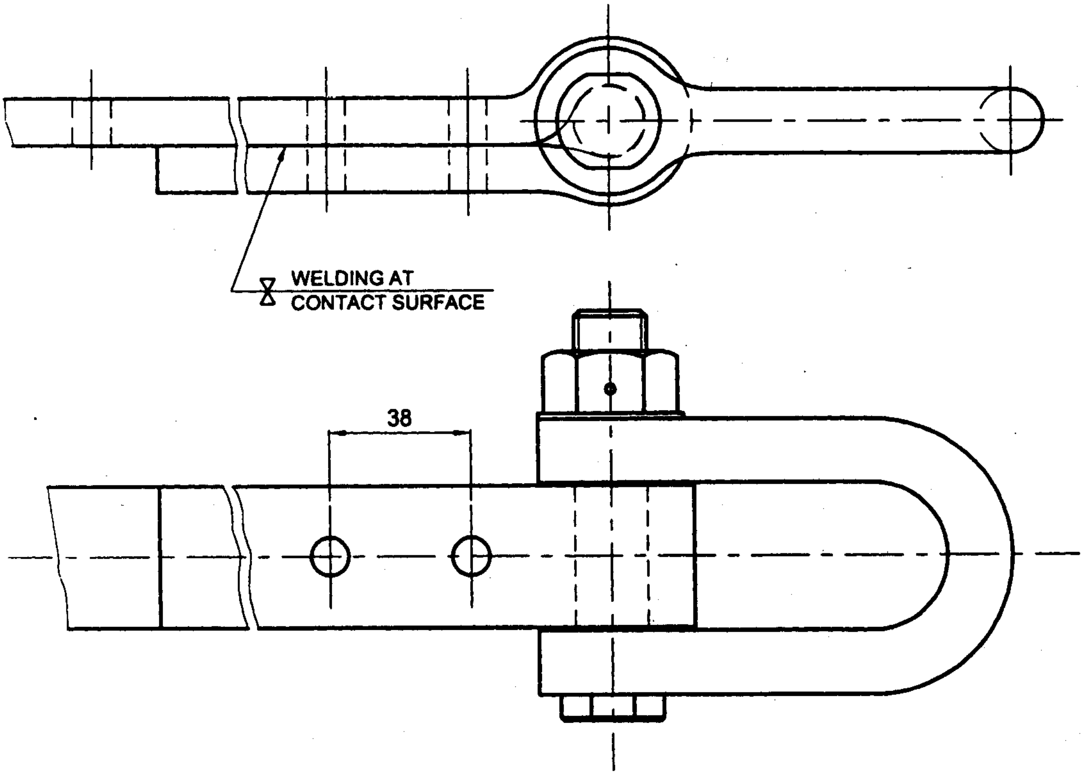

R5
34
78 ± 2
34
R5
140 ± 25
+0
Ø34-1.0
R39
R40
Ø78
Ø37.5
HOLE TO BE DRILLED IN ASSEMBLY FOR SPLIT PIN 6.3x70 AS PER IS 549 ON ALL SIX FACES
M36
NUT
3
54
Ø80
4
196
162
142
12
1.5x45°
50
Ø 55

a) D-SHACKLE

b) D-SHACKLE PIN OF

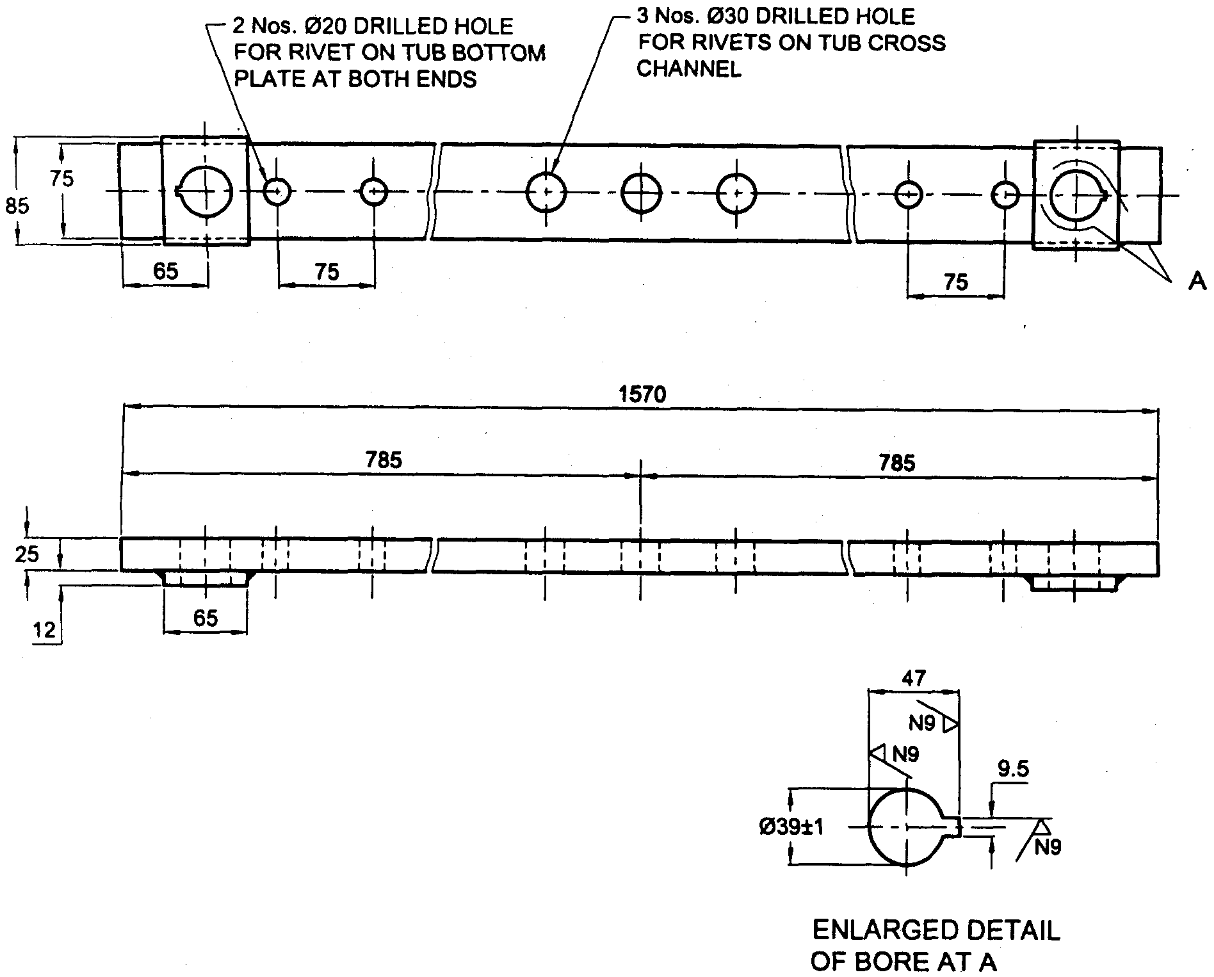
All dimensions in millimetres.

FIG. 2 END FITTING FOR LAPPED TYPE DRAWBAR



All dimensions in millimetres.

FIG. 3 LAPPED TYPE DRAWBAR END WITH END FITTING



All dimensions in millimetres.

FIG. 4 FLAT TYPE DRAWBAR

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Mining Techniques and Equipment Sectional Committee, ME 08

Organization	*Representative(s)*
Directorate General of Mines Safety, Dhanbad	Shri Y. K. Sharma (***Chairman***) Shri Anup Viswas (*Alternate*)
Bharat Coking Coal Ltd, Dhanbad	Shri Ramji Sahay
Bharat Earth Movers Ltd, Bangalore	Shri V. Palaniswamy Shri T. R. Loganathan (*Alternate*)
Central Coalfields Ltd, Ranchi	Chief General Manager (Operations) Chief General Manager (Equipments) (*Alternate*)
Central Mine Planning & Design Institute Ltd, Ranchi	Shri S. K. Chatterji Shri Kishore Kumar (*Alternate*)
Central Mining Research Institute, Dhanbad	Shri V. N. Pathak
Eimco Elecon (India) Ltd, Vallabh Vidyanagar	Shri A. M. Deshpande Shri Ravindra Luthra (*Alternate*)
Gujarat Mineral Development Corporation, Ahmedabad	Shri S. N. Mathur
Hindalco Industries Ltd, District Sonbhadra	Shri K. K. Patodia Shri Ashok Bamji (*Alternate*)
Hindustan Copper Ltd, Kolkata	Shri Kamalesh Singh Shri O. P. Bhardwaj (*Alternate*)
Hindustan Zinc Ltd, Udaipur	Shri K. C. Jain
Indian Bureau of Mines, Goa	Shri Ranjan Sahai
Kapur Mining Equipment Pvt Ltd, Asansol	Shri Dipak Kapur Shri Tapan Dutta (*Alternate*)
Mahanadi Coalfields Limited, Distt Sambalpur	Shri R. B. Upadhyay Shri B. P. Pattnaik (*Alternate*)
Manganese Ore (India) Ltd, Nagpur	Shri P. M. Reddy Shri G. Wangneo (*Alternate*)
Nanda Millar Co, Kolkata	Shri J. P. Goenka Shri Pankan Goenka (*Alternate*)
National Aluminium Co Ltd, New Delhi	Shri R. C. Pati Shri C. M. D. Murty (*Alternate*)
National Mineral Development Corporation, Hyderabad	Shri P. Karyampudi Dr Rajendra Singh (*Alternate*)
North Eastern Coalfields, Guwahati	Shri Arvind Kumar Shri S. A. H. Abidi (*Alternate*)
South Eastern Coalfields Ltd, Bilaspur	Shri A. Shukla
The Eastern Coalfields Ltd, Sanctoria	Shri S. C. Basu Shri D. K. Roy (*Alternate*)
The Hutti Gold Mines, Karnataka	Dr M. L. Patil
The Indian Chain Link Manufacturers Company, Mumbai	Shri P. K. Nevatia
The Singareni Collieries Co Ltd, Distt Khammam, Andhra Pradesh	Shri K. Raghavendra Rao Shri E. Raja Rao (*Alternate*)
The Tata Iron and Steel Co Ltd, Distt Dhanbad	Shri R. S. Singh Shri V. K. Srivastava (*Alternate*)
TRF Ltd, Jamshedpur	Shri S. S. Mukhopadhay Shri N. C. Goswami (*Alternate*)
Western Coalfields Ltd, Nagpur	Shri A. K. Haldar Shri P. S. Raju (*Alternate*)
BIS Directorate General	Shri A. S. Basu, Scientist 'F' and Head (MED) [Representing Director General (*Ex-officio*)]

Member Secretary
Shri P. Venkateswara Rao
Scientist 'E' (Director) (MED), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc: No. ME 08 (777).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *website* : www.bis.org.in

Regional Offices:		Telephones
Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	2323 7617 2323 3841
Eastern	: 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi KOLKATA 700054	2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160022	260 3843 260 9285
Southern	: C.I.T. Campus, IV Cross Road, CHENNAI 600113	2254 1216, 2254 1442 2254 2519, 2254 2315
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	2832 9295, 2832 7858 2832 7891, 2832 7892

Branches : AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. NALAGARH. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VISAKHAPATNAM.

Printed at Simco Printing Press, Delhi